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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,058	06/24/2003	Bomy A. Chen	FIS920030132US1	1057

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HOFFMAN WARNICK & D'ALESSANDRO, LLC
75 STATE STREET
14TH FLOOR
ALBANY, NY 12207

EXAMINER	
NG, JAMES WAI HEUNG	

ART UNIT	PAPER NUMBER
1763	

MAIL DATE	DELIVERY MODE
05/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/604,058	CHEN ET AL.	
	Examiner	Art Unit	
	James Ng	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-16 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-16 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election with traverse of Group II, claims 13-16 and 18, in the reply filed on March 27, 2007 is acknowledged. The traversal is on the ground(s) that no serious burden exists relative to the separation of Groups I, II and III. This is not found persuasive because Groups I, II and III represent three independent or distinct inventions that fall under three different classifications, it would pose a serious burden on the examiner to conduct such a wide field of search as indicated in item 4 of the previous action.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 13-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. (US 6436353 B1) in view of Ishihara et al. (US 6605134 B2).**

Ohmi teaches:

i. An integrated circuit plasma processing system (Figure 1, column 4, lines 1-9) comprising: a process chamber (Figure 1, Processing Chamber) for carrying out plasma-enhanced processing on a wafer; and a reclamation system (Figure 1, all components after Back Pump, column 1, lines 6-8, column 4, lines 2-4) including: a first separator (Figure 1, Staged Coolers or Cooling Tubes) receiving plasma-enhanced exhaust from the

process chamber, the first separator including a plurality of temperature zones (Figure 1, three Cooling Tubes in series, each operates at a different temperature) each temperature zone including a collection vessel (Figure 1, structure below each Cooling Tube) for collecting material that condenses in the respective temperature zone – **in claim 13.**

ii. A first separator (Figure 1, Staged Coolers or Cooling Tubes), wherein each temperature zone has a lower temperature than a preceding temperature zone (Figure 1, three Cooling Tubes in series, each operates at a lower temperature than the preceding Tube) - **claim 14.**

Applicant's claim requirement of "each temperature zone has a lower temperature than a preceding temperature zone" is a claim requirement of intended use in the pending apparatus claim. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

iii. A plasma gas reclamation system (Figure 1, all components after Back Pump, column 1, lines 6-8, column 4, lines 2-4) comprising a chemical reactive separator (Figure 1, Adsorption/Reaction Tube, column 4, lines 28-31) for receiving exhaust prior to the first

separator (Figure 1, Staged Coolers or Cooling Tubes) and separating chemically reactive material from the exhaust – **claim 18.**

Ohmi does not teach:

i. An integrated circuit plasma processing system comprising: a material processing unit coupled to an outlet of each collection vessel; and a material reuse unit coupled to each material processing unit, the material reuse unit including: a mixing chamber for receiving material from at least one reservoir, the mixing chamber coupled to the process chamber; an injector coupled to each reservoir for selectively communicating material from a respective reservoir to the mixing chamber; and a non-reclaimed material supply coupled to the mixing chamber – **in claim 13.**

ii. The apparatus of claim 13, wherein each material processing unit includes: a disposal unit for disposing of unwanted material; a reservoir for holding wanted material; and a directing valve for directing material to one of the disposal unit and the reservoir - **as claimed in claim 15.**

Ishihara teaches a plasma processing apparatus and waste gas reclamation apparatus including:

i. A material processing unit (See examiner's notations on enclosed printout of Ishihara, Figure 1) coupled to the outlet of a collection vessel (32, Figure 1), and a material reuse unit (See examiner's notations on enclosed printout of Ishihara, Figure 1) coupled to the material processing unit, the material reuse unit including: a mixing chamber (35, Figure 1) for receiving material from at least one reservoir (48, Figure 1), the mixing chamber (35, Figure 1) coupled to the process chamber (33, Figure 1); an injector (66, Figure 1)

coupled to a reservoir (48, Figure 1) for selectively communicating material from a respective reservoir (48, Figure 1) to the mixing chamber (35, Figure 1); and a non-reclaimed material supply (72, Figure 1) coupled to the mixing chamber (35, Figure 1) – **in claim 13**.

ii. A material processing unit (See examiner's notations on enclosed printout of Ishihara, Figure 1) includes a disposal unit (69, Figure 1) for disposing of unwanted material, a reservoir (48, Figure 1) for holding wanted material, and a directing valve (67, Figure 1) for directing material to one of the disposal unit and the reservoir – **claim 15**.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Ishihara's material processing unit and material reuse unit to Ohmi's apparatus.

Motivation to add Ishihara's material processing unit and material reuse unit to Ohmi's apparatus is for reducing process gas waste as taught by Ishihara ("consumption amount", column 3, lines 38-46).

4. **Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. (US 6436353 B1) in view of Ishihara et al. (US 6605134 B2) as applied to claims 13-15 and 18 above, further in view of Ha et al. (US 5779863).**

Ishihara further teaches:

i. A material processing unit (See examiner's notations on enclosed printout of Ishihara, Figure 1), wherein a directing valve (67, Figure 1) directs material to one of the disposal unit (69, Figure 1), the reservoir (48, Figure 1) and the second separator (46, Figure 1) – **in claim 16**.

Ohmi and Ishihara do not teach:

i. The apparatus of claim 15, wherein each material processing unit further includes a second separator, the second separator including at least one secondary temperature zone having a temperature different than a respective preceding temperature zone of the first separator, wherein each secondary temperature zone includes a secondary collection vessel for collecting material that condenses in the respective secondary temperature zone **– in claim 16**.

Ha teaches a semiconductor processing exhaust gas treatment system including:

i. A material processing unit (all components, Figure 2) further includes a second separator (fractional distillation column, 11, Figure 2), the second separator (fractional distillation column, 11, Figure 2) including at least one secondary temperature zone (column 5, lines 64-67) having a temperature different than a respective preceding temperature zone (column 5, lines 42-44) of the first separator (fractional distillation column, 4, Figure 2), wherein each secondary temperature zone (column 5, lines 64-67) includes a secondary collection vessel (23, Figure 2) for collecting material that condenses in the respective secondary temperature zone (column 5, lines 64-67) – **in claim 16**.

Applicant's claim requirement of "at least one secondary temperature zone having a temperature different than a respective preceding temperature zone" is a claim requirement of intended use in the pending apparatus claim. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural

difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add Ha's second separator, and a collection vessel for collecting condensate from the second separator to Ohmi's apparatus.

Motivation to add Ha's second separator is to further purify the product from the first separator and remove remaining impurities, and addition of the collection vessel is to collect separator condensate which can be recycled and combined with the feed stream to control composition, and to dampen out any large fluctuations in the composition or flow of the feed as taught by Ha (column 7, lines 9-18 and 37-42). Also, it is well established that the duplication of parts is obvious (In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

Response to Arguments

5. Applicant's arguments filed on March 27, 2007 have been fully considered but they are not persuasive. Applicant argues that Ishihara does not teach a mixing chamber, i.e. no mixing occurs between reclaimed and non-reclaimed rare gases in Ishihara's purifier (35, Fig. 1). On the contrary, Ishihara teaches that reclaimed rare gas from the reservoir (48, Fig. 1) can be mixed with the non-reclaimed gas from the supply cylinder (72, Fig. 1) as they converge into the purifier (Col. 10, lines 23-32). Therefore, rejection based on Ishihara is proper.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Ng whose telephone number is 571-272-7088. The examiner can normally be reached on 9:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, please call Primary Examiner, Jeffrie R. Lund at 571-272-1437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

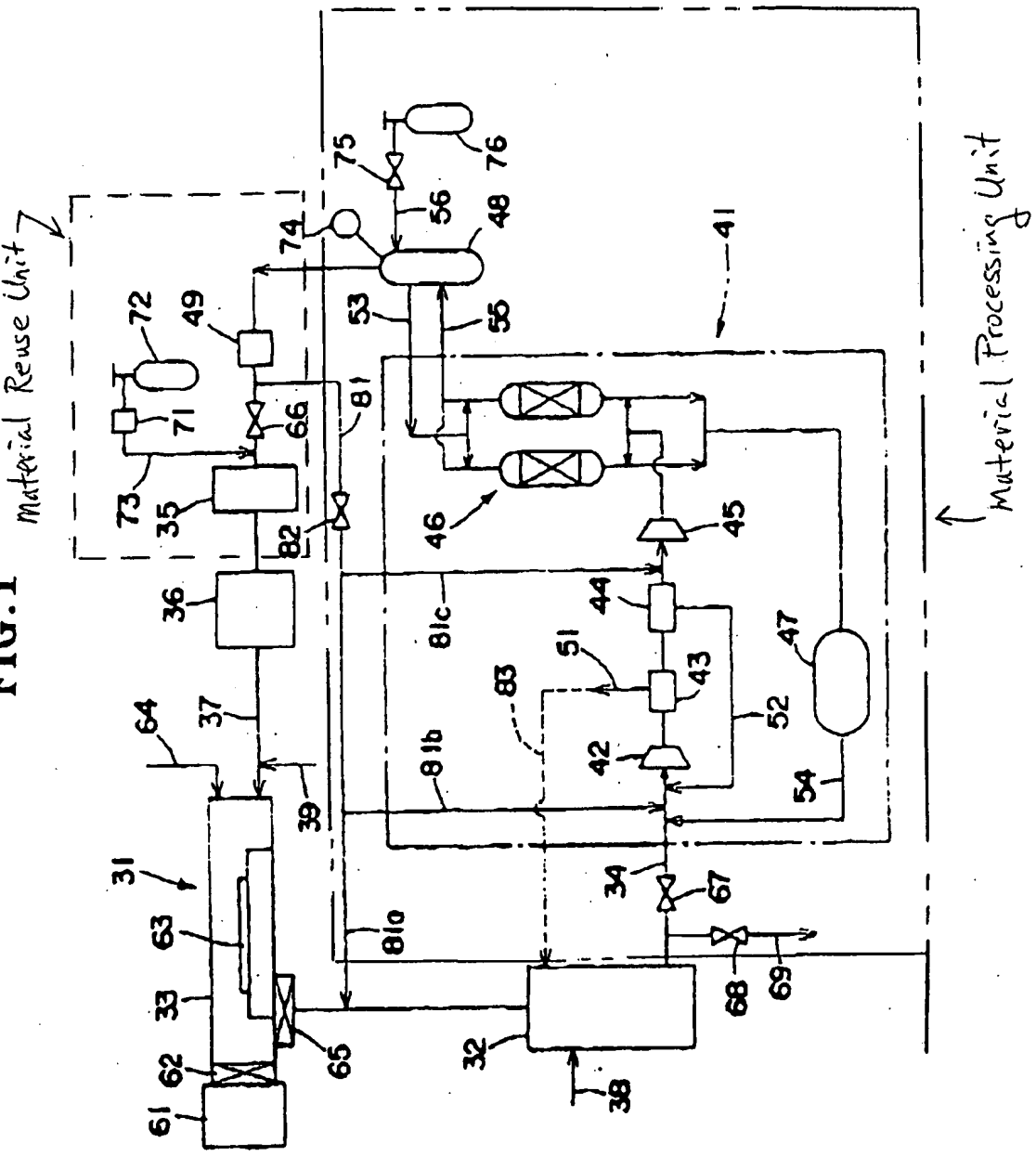
system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

5/17/07

James Ng
Patent Examiner
Art Unit 1763

Jeffrie R. Lund
Primary Patent Examiner
Art Unit 1763

FIG. 1


Material Reuse Unit
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